

CHAPTER 10 STORAGE VESSELS

This chapter addresses the EPA's responses to public comments on storage vessels in the EPA's Proposed *Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources*.

Commenters also raised issues on topics that are not covered by this chapter. Please refer to the following chapters for responses specific to those issues:

- ☐ **Chapter 1:** Source Category
- ☐ **Chapter 2:** Regulation of Methane
- ☐ **Chapter 3:** Well Completions
- ☐ **Chapter 4:** Fugitives Monitoring
- ☐ **Chapter 5:** Pumps
- ☐ **Chapter 6:** Controllers
- ☐ **Chapter 7:** Compressors
- ☐ **Chapter 8:** Equipment Leaks at Natural Gas Processing Plants
- ☐ **Chapter 9:** Liquids Unloading
- ☐ **Chapter 11:** Compliance
- ☐ **Chapter 12:** Regulatory Impact Analysis
- ☐ **Chapter 13:** Existing State, Local, and Federal Rules
- ☐ **Chapter 14:** Subpart OOOO
- ☐ **Chapter 15:** Miscellaneous
- ☐ **Chapter 16:** Comment Period Extension

10.1 Storage Vessels

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 98

Comment: API agrees that Continuous Parameter Monitoring is not warranted for Storage Vessel Control Devices

In NSPS Subpart OOOO, EPA proposed only two changes to the monitoring requirements for storage vessel control devices:

(1) Visible emission tests would be required on a monthly basis (instead of quarterly) for manufacturer testing combustion devices -§60.5413(e)(3), and

(2) The criteria for this visible emission test was modified as follows: Devices must be operated with no visible emissions, except for periods not to exceed a total of 2 minutes during any hour ~~1 minute during any 15-minute period~~.

The requirements in proposed Subpart OOOOa are consistent with these changes to Subpart OOOO.

Notably absent are requirements to perform continuous parameter monitoring. API agrees that continuous parameter monitoring is not warranted and supports that EPA elected not to include such provisions in the proposed amendments to Subpart OOOO or the proposed Subpart OOOOa.

Response: Comment is a supportive comment to which no response is required. The EPA is finalizing the proposed changes to monitoring requirements in this final rule.

Commenter Name: Cory Pomeroy, General Counsel

Commenter Affiliation: Texas Oil & Gas Association

Document Control Number: EPA-HQ-OAR-2010-0505-7058

Comment Excerpt Number: 72

Comment: EPA recognizes that its proposed rule could inadvertently subject water recycling tanks to the NSPS and is “considering changes in the final rule to remove tanks that are used for water recycling from potential NSPS applicability.” EPA solicits comment on approaches that could be taken to amend the definition of “storage vessel” or other changes to the NSPS that would resolve this issue without excluding storage vessels appropriately covered by the NSPS. In addition, EPA solicits comment on location, capacity, or other criteria that would be appropriate for such purpose.

EPA should consider adding a definition of “process vessel” in Subpart OOOOa to include water recycle tanks and other tanks. The definition of “storage vessel” set out in Subpart OOOO and the proposed Subpart OOOOa already excludes “process vessels such as surge control vessels, bottoms receivers or knockout vessels.” There is no definition of process vessel in the proposal.

NSPS Subpart Kb, 40 C.F.R. § 60.111b, provides a definition of “process tank” to mean

a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Sour water disposal, secondary recovery (waterflood) and carbon dioxide enhanced recovery operations, for example, utilize tanks to recycle large volumes of water, which is reinjected into subsurface formations. Low volume concentrations of VOC and methane, but high volume throughput may result in high apparent working and breathing losses. Recycle tanks are generally connected to a pipeline or directly to injection wells and are operated within a narrow range of liquid levels. Operation at near constant levels minimizes working losses and operation at near-constant temperature minimizes breathing losses. In addition, such tanks provide surge capacity and may operate as oil-water separators in hydrocarbon skimming.

Fundamentally, it is critical for EPA to exclude these tanks from regulation because the cost-effectiveness at the concentration levels at issue are simply not consistent with NSPS case law and EPA’s historic approach to implementing NSPS rules from a cost perspective.

Response: The EPA agrees that certain large water recycling vessels should be exempt from affected facility status for storage vessels, because the EPA does not intend such vessels to be storage vessel affected facilities under subpart OOOOa. By exempting such vessels the EPA will remove a disincentive for recycling of water for hydraulic fracturing and other uses. The EPA has added language excluding water recycling vessels above a certain capacity from affected facility status in the final rule. See section VI.H.11 of the preamble to the final rule for more information regarding this issue.

The EPA disagrees that storage vessels that may contain produced water should always be exempt from §60.5365a and §60.5395a. Produced water can contain high concentrations of VOC. The EPA’s current regulations accommodate instances where a storage vessel with low emissions is not an affected facility. Under §60.5365a, a storage vessel with a potential for VOC emissions less than 4 tpy is not an affected facility. If a storage vessel for produced water can demonstrate that potential emissions are less than 4 tpy, the storage vessel would not be subject to the storage vessel standards.

Commenter Name: Urban Obie O'Brien
Commenter Affiliation: Apache Corporation
Document Control Number: EPA-HQ-OAR-2010-0505-6808
Comment Excerpt Number: 23

Comment: Water Recycling: a. Section IX.B.9. Tanks Associated with Water Recycling Operations: Apache recommends §5365a(e) be revised to add the following language: " Vessels with a capacity greater than 2,500 barrels used primarily in water recycling processes that are located downstream of standard oil, gas, and water separation are not storage vessels affected facilities under this subpart. These vessels are intended for the collection, treatment, and storage of flowback water from well completions, water produced during ongoing production, and other non-potable water for recycle thereby reducing the volume of potable water withdrawn from wells or other sources." During 2014, Apache collected and treated 11.4 million barrels of flowback water for recycle. We are encouraged that the Agency is considering changes in the Final Rule to remove the high-throughput tanks used for water recycling from potential NSPS applicability under Subpart OOOOa and firmly believe it should be done during this rulemaking. As EPA requested, Apache has recommended language to exclude these tanks from the regulation. Apache would appreciate the opportunity to review and discuss any proposed final language on this topic with the Agency prior to publication of the Final Rule.

Response: See response to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72.

Commenter Name: Ben Shepperd
Commenter Affiliation: Permian Basin Petroleum Association
Document Control Number: EPA-HQ-OAR-2010-0505-6849
Comment Excerpt Number: 107

Comment: The PBPA would like to commend EPA for the removal of water tanks from subpart OOOO applicability, specifically the large tanks primarily used for water recycling. This is an important step in encouraging water recycling activities on a large scale. In anticipation of this rule change, many water-recycling projects have continued forward and are expected to make significant achievements in the reduction of fresh water usage in the Permian Basin. Had EPA not excluded large water tanks used for recycling, these endeavors would have not been economical, and in many cases operators would have returned to the use of fresh water for hydraulic fracturing.

Response: See response to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72.

Commenter Name: Alvyn A. Schopp, Chief Administration Officer and Regional Vice President and Treasurer
Commenter Affiliation: Antero Resources Corporation

Document Control Number: EPA-HQ-OAR-2010-0505-6935

Comment Excerpt Number: 11

Comment: USEPA is considering changes in the final rule to remove tanks that are used for water recycling from potential NSPS applicability. USEPA solicits comment on approaches that could be taken to amend the definition of "storage vessel" or other changes to the NSPS that would resolve this issue without excluding storage vessels appropriately covered by the NSPS.

Antero supports the discussion of means to remove such storage vessels from NSPS applicability because of the low emission potential. As discussed by USEPA in the *SPCC Guidance for Regional Inspectors* (December 16, 2013, Section 2.4.7), "A dry gas production facility that produces natural gas from a well (or wells) but does not also produce condensate or crude oil that can be drawn off the tanks, containers, or other production equipment at the facility is not subject to the SPCC rule." In this example, USEPA has recognized that certain storage vessels at production facilities should be exempt from regulation because they contain negligible quantities of oil. By extension, those same vessels would have negligible potential to generate atmospheric emissions. Storage vessels and other equipment with low emission potential should be included in a category of *de minimis* sources present at well sites that would be exempt from these requirements.

Antero has numerous storage tanks at dry gas well pads that do not contain oil. The produced water is typically blended with freshwater and reused to support Antero's drilling and completions operations. The VOC and HAPs emissions from these produced water storage tanks are *de minimis* and are exempt from state air permitting programs. These produced water storage tanks should not be subject to any NSPS requirement.

Response: See response to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72.

Commenter Name: Don Anderson, Director of Environmental

Commenter Affiliation: MarkWest Energy Partners, L.P.

Document Control Number: EPA-HQ-OAR-2010-0505-6957

Comment Excerpt Number: 42

Comment: EPA should exempt all produced water storage tanks from NSPS OOOOa.

As noted in the preamble to the proposed rule, large water storage tanks are exempted from the proposed NSPS due to their low overall VOC emissions. 80 *Fed. Reg.* at 56,648. MarkWest supports this exemption, but also encourages an expansion of this exemption to all produced water storage tanks. Unintended coverage of small tanks under NSPS OOOOa would discourage water recycling. If large-throughput tanks can safely be exempted, it stands to reason that much smaller tanks-imposing even less emissions- should also be exempted.

Response: See response to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72.

Commenter Name: Lee Fuller, Executive Vice President, and V. Bruce Thompson, President
Commenter Affiliation: Independent Petroleum Association of America (IPAA) and the American Exploration and Production Council (AXPC)
Document Control Number: EPA-HQ-OAR-2010-0505-6983
Comment Excerpt Number: 23

Comment: Miscellaneous Requests for Input

- IPAA/AXPC supports a clarification that the storage vessel provisions do not apply to large (e.g., 25,000 bbls or more) tanks used for water recycling, as they have very low emissions but might trigger the 6-ton threshold because of size and volume of throughput. EPA's recognition that this water has very low emissions calls into question whether the smaller "storage vessels" that hold the same type of water, just smaller quantities, should be an affected facility.

Response: See response to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72.

Commenter Name: Cory Pomeroy, General Counsel
Commenter Affiliation: Texas Oil & Gas Association
Document Control Number: EPA-HQ-OAR-2010-0505-7058
Comment Excerpt Number: 73

Comment: EPA should not establish a size threshold for water recycle tanks. Tanks associated with water recycling operations are not necessarily "very large vessels having capacities of 25,000 barrels or more," but may have design capacities of 1,000 barrels or less. EPA should consider a gas-to-water ratio (GWR) threshold in terms of standard cubic feet of gas per U.S. petroleum barrel of water. Tanks receiving water that is already stabilized such that only working and breathing losses occur could be categorically excluded.

Fundamentally, it is critical for EPA to exclude these tanks from regulation because the cost-effectiveness at the concentration levels at issue are simply not consistent with NSPS case law and EPA's historic approach to implementing NSPS rules from a cost perspective.

Response: The EPA does not agree that smaller storage vessels should be included in the water recycling tank exemption in §60.5365a(e)(5) of the final rule. Our information indicates that the volume of water typically used in a fracturing or refracturing operation far exceeds 1,000 barrels. Therefore, we do not believe that owners or operators are likely to use a large number of small tanks for recycling operations due to cost and space considerations at the well site. We also believe that not specifying a size limit in the exemption could lead to unnecessary confusion for regulatory personnel as to which tanks are subject to the final rule. The size limit we have included in the final rule more clearly delineates water recycling tanks from other, generally

smaller, storage vessels at the well site that are subject to the final rule. See also response to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72.

Commenter Name: Kathleen M. Sgamma, Vice President, Government and Public Affairs

Commenter Affiliation: Western Energy Alliance

Document Control Number: EPA-HQ-OAR-2010-0505-6930

Comment Excerpt Number: 60

Comment: As noted in the preamble to the proposed rule, large water storage tanks are exempted from the proposed NSPS due to their low overall VOC emissions. 80 Fed. Reg. at 56,648. The Alliance supports this exemption; but also encourages an expansion of this exemption to all produced water storage tanks. Unintended coverage of small tanks under OOOOa would discourage water recycling. If large-throughput tanks can safely be exempted, it stands to reason that much smaller tanks—imposing even less emissions—should also be exempted.

Response: See responses to DCN EPA-HQ-OAR-2010-0505-7058, Excerpt 72 and EPA-HQ-OAR-2010-0505-7058, Excerpt 73.

Commenter Name: W. Michael Scott, General Counsel

Commenter Affiliation: Trilogy Operating, Inc.

Document Control Number: EPA-HQ-OAR-2010-0505-6603

Comment Excerpt Number: 4

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks. Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the

industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, Trilogy's tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: The EPA clarifies that nothing in the regulatory text of the proposed or final standards is intended to prohibit or discourage the use of atmospheric storage vessels. However, we note that storage vessels that are affected facilities under §60.5365a(e) and subject to the requirements of §60.5395a which requires the owner/operator to equip the storage vessel with a cover that meets the requirements of §60.5411a(b). The cover requirements state that the cover, and all openings on the cover, must form a continuous and impermeable barrier over the entire surface of the liquid in the storage vessel. Paragraph 60.5411a(b)(2) requires openings in the cover to be maintained in a closed position except during those times when it is necessary to use an opening such as when it is necessary to equalize or balance the internal pressure of the unit following changes in the level of the material in the unit. We believe these requirements clearly indicate that atmospheric storage vessels may be used, and no further amendments to the regulatory text are required.

Commenter Name: W. Michael Scott, Vice President and General Counsel

Commenter Affiliation: CrownQuest Operating, LLC

Document Control Number: EPA-HQ-OAR-2010-0505-6703

Comment Excerpt Number: 2

Comment: Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, CrownQuest's tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed §60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO,

and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that §60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Bradley C. Cross, President/Partner

Commenter Affiliation: Big Star Oil & Gas, LLC

Document Control Number: EPA-HQ-OAR-2010-0505-6757

Comment Excerpt Number: 2

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is my understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. I think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. I believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to relieve pressure for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, Big Star's tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduces the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, I ask for EPA to confirm that the Methane NSPS allows for their use.

It is my understanding that under proposed §60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and I believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks the oil and gas industry has raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and I incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, I believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Glenn Prescott

Commenter Affiliation: RK Petroleum Corporation

Document Control Number: EPA-HQ-OAR-2010-0505-6788

Comment Excerpt Number: 2

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able

to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO. In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: W. Jeffrey Sparks

Commenter Affiliation: Discovery Operating, Inc.

Document Control Number: EPA-HQ-OAR-2010-0505-6790

Comment Excerpt Number: 2

Comment: Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, Discovery's tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Josh W. Luig

Commenter Affiliation: Veritas Energy, LLC

Document Control Number: EPA-HQ-OAR-2010-0505-6797

Comment Excerpt Number: 2

Comment: Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Josh W. Luig

Commenter Affiliation: Veritas Energy, LLC

Document Control Number: EPA-HQ-OAR-2010-0505-6797

Comment Excerpt Number: 3

Comment: It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year (“tpy”) do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel’s potential to emit (“PTE”). This reading is in keeping with EPA’s previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA’s statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Rick D. Davis, Jr.

Commenter Affiliation: Midland Energy, Inc. and Petroplex Energy, Inc.

Document Control Number: EPA-HQ-OAR-2010-0505-6801

Comment Excerpt Number: 2

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks. Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Ben Shepperd

Commenter Affiliation: Permian Basin Petroleum Association

Document Control Number: EPA-HQ-OAR-2010-0505-6849

Comment Excerpt Number: 2

Comment: Based on both the proposed text of the Methane NSPS, and the current implementation of Subpart OOOO, it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, we have been informed that several of our member companies' tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the

Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Michael Hollis

Commenter Affiliation: Diamondback E&P LLC

Document Control Number: EPA-HQ-OAR-2010-0505-6869

Comment Excerpt Number: 5

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, qualifying Diamondback tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed §60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process. Specifically, EPA explained that:

"Our September 28, 2012, letter clarified that the cover and closed-vent requirements must be met when VRU is used to meet the 95 percent reduction emission standards. That said, we previously determined that routing of vapor through a cover and properly operated closed-vent system would recover all vapor routed to the system as long as the VRU is operating (i.e., 95 percent of the vapor being routed to a line when operating for 95 percent of the time). In light of the above, as long as the VRU is operated consistent with those requirements, we believe that it is appropriate to exclude 95 percent of the vapor that would otherwise be emitted if not recovered when determining PTE for purposes of determining affected facility status. As a result of this comment, and based on our prior clarification of this issue, the final amendments to § 60.5365(e) include a provision that "any vapor from the storage vessel that is recovered and routed to a process through a VRU designed and operated as specified in this section is not required to be included in the determination of VOC potential to emit for purposes of determining affected facility status."

"Further, we have added language to §60.5365(e) that provides for this adjustment of PTE as long as (1) the storage vessel is operated in compliance with cover requirements in § 60.5411(b) and the closed-vent system ["CVS"] requirements in § 60.5411(c), which has a requirement that the CVS (including the VRU) is operational at least 95 percent of the time, and that the operator maintain records demonstrating compliance with these requirements. We were concerned that, should a VRU be removed or operated inconsistent with the conditions that were the basis for the PTE reduction following the PTE determination for assessing whether the storage vessel is an affected facility, emissions could increase without the storage vessel being subject to control. To address that possibility, we have added language to § 60.5365(e) such that, in the event of removal of apparatus that recovers and routes vapor to a process or operation that is inconsistent with the conditions for qualifying for the PTE reduction, the owner or operator would be required to determine PTE from the storage vessel within 30 days of such removal or operation. If the PTE is determined to be 6 tpy VOC or more, then the storage vessel would be an affected facility and subject to the control requirements in §60.5395. We believe this approach will help avoid circumvention of the NSPS."

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

We ask EPA to further clarify that even if a well site is modified and becomes subject to the fugitive-emissions monitoring portions of the Methane NSPS, no existing storage vessel will be required to comply with the new control requirements in the Methane NSPS, unless the existing storage vessel is itself modified or reconstructed as defined by the Methane NSPS; and to confirm that these sets of requirements have independent triggers in the Methane NSPS.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4. In response to the commenter's request that the EPA clarify the modification status of an existing storage vessel located at a well site when that well site is modified, we point out that affected facility status of well sites and storage vessels at the well site are independent of one another. Well site affected facility status is relevant only in the context of the fugitive emission standards at §60.5377a and has no bearing on the affected facility status of storage vessels at the well site. We believe this adequately addresses the commenter's concerns.

Commenter Name: Dan G. LeRoy

Commenter Affiliation: Legacy Reserves Operating LP

Document Control Number: EPA-HQ-OAR-2010-0505-6882

Comment Excerpt Number: 2

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks

do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed §60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process. Specifically, EPA explained that:

"Our September 28, 2012, letter clarified that the cover and closed-vent requirements must be met when VRU is used to meet the 95 percent reduction emission standards. That said, we previously determined that routing of vapor through a cover and properly operated closed-vent system would recover all vapor routed to the system as long as the VRU is operating (i.e., 95 percent of the vapor being routed to a line when operating for 95 percent of the time). In light of the above, as long as the VRU is operated consistent with those requirements, we believe that it is appropriate to exclude 95 percent of the vapor that would otherwise be emitted if not recovered when determining PTE for purposes of determining affected facility status. As a result of this comment, and based on our prior clarification of this issue, the final amendments to §60.5365(e) include a provision that "any vapor from the storage vessel that is recovered and routed to a process through a VRU designed and operated as specified in this section is not required to be included in the determination of VOC potential to emit for purposes of determining affected facility status."

"Further, we have added language to §60.5365(e) that provides for this adjustment of PTE as long as (1) the storage vessel is operated in compliance with cover requirements in § 60.5411(b) and the closed-vent system ["CVS"] requirements in §60.5411(c), which has a requirement that the CVS (including the VRU) is operational at least 95 percent of the time, and that the operator maintain records demonstrating compliance with these requirements. We were concerned that, should a VRU be removed or operated inconsistent with the conditions that were the basis for the

PTE reduction following the PTE determination for assessing whether the storage vessel is an affected facility, emissions could increase without the storage vessel being subject to control. To address that possibility, we have added language to §60.5365(e) such that, in the event of removal of apparatus that recovers and routes vapor to a process or operation that is inconsistent with the conditions for qualifying for the PTE reduction, the owner or operator would be required to determine PTE from the storage vessel within 30 days of such removal or operation. If the PTE is determined to be 6 tpy VOC or more, then the storage vessel would be an affected facility and subject to the control requirements in §60.5395. We believe this approach will help avoid circumvention of the NSPS.”

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that §60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

We ask EPA to further clarify that even if a well site is modified and becomes subject to the fugitive-emissions monitoring portions of the Methane NSPS, no existing storage vessel will be required to comply with the new control requirements in the Methane NSPS, unless the existing storage vessel is itself modified or reconstructed as defined by the Methane NSPS; and to confirm that these sets of requirements have independent triggers in the Methane NSPS.

In addition to debilitating compliance costs, requiring further emission reductions from storage tanks would result in unintended safety consequences. Atmospheric tanks cannot sustain the pressure that would result from preventing all natural gas emissions from escaping from the vessels. As a result, operators would have to replace atmospheric tanks with pressurized tanks. While these pressurized tanks may lead to some small reduction in natural gas emissions, they pose a number of safety risks. Gases in high-pressure cylinders contain an extraordinary amount of stored energy. If a cylinder valve is breached (e.g., breaks off when the cylinder falls and strikes a hard surface, etc.), the stored energy in the cylinder is released as thrust. The cylinder can accelerate to speeds great enough to penetrate concrete walls." For example, a failure or blockage of the pressure release valve can cause the tank to become over-pressurized and result in a forceful rupture, which could result in fragments of the tank flying into the air and falling into the vicinity. A sudden release of compressed gas can displace the oxygen in the surrounding area and overcome the workers quickly, without warning. The risk of a failure of the vessel can also be increased due to fatigue from repeated pressurization and depressurization of the fluids inside.

The Occupational Safety & Health Administration ("OSHA") has warned that rupture failures from pressurized vessels can be "much more catastrophic and can cause considerable damage to life and property." As a result, there are a number of OSHA and industry codes and standards that specifically apply to pressurized vessels. We have not seen any indication that EPA has consulted with OSHA to determine whether the Rules might create additional safety hazards to workers, or whether these regulations conflict with existing OSHA regulations or standards. This consultation is critical to ensure the safety of workers at sites that would have to employ these pressurized vessels.

Human errors related to operating pressurized vessels, such as lack of understanding, failure to follow safety operating procedures and lack of functions coordination can have serious consequences. As a result, the addition of pressurized tanks to these well sites would require an overhaul of operating procedures at many of those sites in order to ensure that workers are not exposed to the risks associated with large volumes of pressurized liquids. These compliance and safety overhauls would result in additional costs to the operator that EPA has not yet considered.

There are also dangers associated with removing all gas from the oil before it enters the atmospheric tanks, which would prevent operators from using this as a means of complying with the Rules. There must be positive pressure in the tanks to prevent oxygen from getting into the gas sales line. Oxygen is highly corrosive, and corrosion could lead to other safety and environmental issues such as infrastructure corrosion, which could lead to dangerous gas operating conditions downstream of the well site.

Recommendations: Rather than risk exposing operators to debilitating costs to replace atmospheric tanks, and exposing workers to the safety risks associated with pressurized tanks, EPA should clarify that:

1. Emissions from storage vessels that are sent to a VRU that complies with EPA's regulations are not counted towards a storage vessel's 6 tpy PTE;
3. Both the storage vessel affected facilities that are in compliance with the control requirements in Subpart OOOO, and the storage vessels that emit less than 6 tpy at affected well sites do not need to install additional equipment in order for the vessels, well sites, or compressor stations to comply with these Rules.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Denzil R. West, Vice President

Commenter Affiliation: Reliance Energy, Inc.

Document Control Number: EPA-HQ-OAR-2010-0505-6915

Comment Excerpt Number: 5

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, many of Reliance's tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed §60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process. Specifically, EPA explained that:

"Our September 28, 2012, letter clarified that the cover and closed-vent requirements must be met when VRU is used to meet the 95 percent reduction emission standards. That said, we previously determined that routing of vapor through a cover and properly operated closed-vent system would recover all vapor routed to the system as long as the VRU is operating (i.e., 95 percent of the vapor being routed to a line when operating for 95 percent of the time). In light of the above, as long as the VRU is operated consistent with those requirements, we believe that it is appropriate to exclude 95 percent of the vapor that would otherwise be emitted if not recovered when determining PTE for purposes of determining affected facility status. As a result of this comment, and based on our prior clarification of this issue, the final amendments to § 60.5365(e) include a provision that "any vapor from the storage vessel that is recovered and routed to a process through a VRU designed and operated as specified in this section is not

required to be included in the determination of VOC potential to emit for purposes of determining affected facility status."

"Further, we have added language to §60.5365(e) that provides for this adjustment of PTE as long as (1) the storage vessel is operated in compliance with cover requirements in § 60.5411(b) and the closed-vent system ["CVS"] requirements in § 60.5411(c), which has a requirement that the CVS (including the VRU) is operational at least 95 percent of the time, and that the operator maintain records demonstrating compliance with these requirements. We were concerned that, should a VRU be removed or operated inconsistent with the conditions that were the basis for the PTE reduction following the PTE determination for assessing whether the storage vessel is an affected facility, emissions could increase without the storage vessel being subject to control. To address that possibility, we have added language to § 60.5365(e) such that, in the event of removal of apparatus that recovers and routes vapor to a process or operation that is inconsistent with the conditions for qualifying for the PTE reduction, the owner or operator would be required to determine PTE from the storage vessel within 30 days of such removal or operation. If the PTE is determined to be 6 tpy VOC or more, then the storage vessel would be an affected facility and subject to the control requirements in §60.5395. We believe this approach will help avoid circumvention of the NSPS."

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6603, Excerpt 4.

Commenter Name: Kathleen M. Sgamma, Vice President, Government and Public Affairs

Commenter Affiliation: Western Energy Alliance

Document Control Number: EPA-HQ-OAR-2010-0505-6930

Comment Excerpt Number: 57

Comment: The proposed rule requires operators to route all gases to a closed vent system. 40 C.F.R. § 60.5411a(c). The upstream oil and natural gas production industry faces a dynamic production stream that varies greatly in terms of composition and volumes of produced fluids. This variability requires the use of systems like thief hatches and other pressure relief devices (PRDs), which allow for atmospheric storage vessels to operate safely under a variety of operational conditions. The proposed rule improperly treats thief hatches and PRDs like sources of fugitive emissions, rather than as parts of an atmospheric system where safety and other operational concerns demand occasional venting during normal operations. It is imperative for the safety and continued operation of this industry that the final rule recognize that thief hatches and PRDs are pieces of equipment that must be permitted to vent occasionally during normal operations, much like pneumatic controllers which are designed to vent. This would include

necessary changes to the definition and concept of closed vent systems. As currently drafted, however, the final rule is not workable in this key respect.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Don Anderson, Director of Environmental

Commenter Affiliation: MarkWest Energy Partners, L.P.

Document Control Number: EPA-HQ-OAR-2010-0505-6957

Comment Excerpt Number: 39

Comment: EPA storage vessel standards in OOOOa are not technically achievable, incentivize unsafe operations, and result in unnecessary economic waste

The proposed rule requires operators to route all gases to a closed vent system. 40 C.F.R. § 60.5411 a(c). The upstream oil and natural gas production industry faces a dynamic production stream that varies greatly in terms of composition and volumes of produced fluids. This variability requires the use of systems like thief hatches and other pressure relief devices ("PRDs"), which allow for atmospheric storage vessels to operate safely under a variety of operational conditions. The proposed rule improperly treats thief hatches and PRDs like sources of fugitive emissions, rather than as parts of an atmospheric system where safety and other operational concerns demand occasional venting. It is imperative for the safety and continued operation of this industry that the final rule recognize that thief hatches and PRDs are pieces of equipment that must be permitted to vent occasionally during normal operations, much like pneumatic controllers which are designed to vent. This would include necessary changes to the definition and concept of closed vent systems. As currently drafted, however, the final rule is not workable in this key respect.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Brandon M. Black, Vice President

Commenter Affiliation: BC Operating, Inc.

Document Control Number: EPA-HQ-OAR-2010-0505-6968

Comment Excerpt Number: 6

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("Subpart OOOO"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed

Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, BC's tanks have been connected to a qualified vapor recovery unit ("VRU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO, and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process. Specifically, EPA explained that:

Our September 28, 2012, letter clarified that the cover and closed-vent requirements must be met when VRU is used to meet the 95 percent reduction emission standards. That said, we previously determined that routing of vapor through a cover and properly operated closed-vent system would recover all vapor routed to the system as long as the VRU is operating (i.e., 95 percent of the vapor being routed to a line when operating for 95 percent of the time). In light of the above, as long as the VRU is operated consistent with those requirements, we believe that it is appropriate to exclude 95 percent of the vapor that would otherwise be emitted if not recovered

when determining PTE for purposes of determining affected facility status. As a result of this comment, and based on our prior clarification of this issue, the final amendments to § 60.5365(e) include a provision that "any vapor from the storage vessel that is recovered and routed to a process through a VRU designed and operated as specified in this section is not required to be included in the determination of VOC potential to emit for purposes of determining affected facility status."

Further, we have added language to § 60.5365(e) that provides for this adjustment of PTE as long as (1) the storage vessel is operated in compliance with cover requirements in § 60.541 l(b) and the closed-vent system ["CVS"] requirements in § 60.541(c), which has a requirement that the CVS (including the VRU) is operational at least 95 percent of the time, and that the operator maintain records demonstrating compliance with these requirements. We were concerned that, should a VRU be removed or operated inconsistent with the conditions that were the basis for the PTE reduction following the PTE determination for assessing whether the storage vessel is an affected facility, emissions could increase without the storage vessel being subject to control. To address that possibility, we have added language to § 60.5365(e) such that, in the event of removal of apparatus that recovers and routes vapor to a process or operation that is inconsistent with the conditions for qualifying for the PTE reduction, the owner or operator would be required to determine PTE from the storage vessel within 30 days of such removal or operation. If the PTE is determined to be 6 tpy VOC or more, then the storage vessel would be an affected facility and subject to the control requirements in § 60.5395. We believe this approach will help avoid circumvention of the NSPS.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

We ask EPA to further clarify that even if a well site is modified and becomes subject to the fugitive-emissions monitoring portions of the Methane NSPS, no existing storage vessel will be required to comply with the new control requirements in the Methane NSPS, unless the existing storage vessel is itself modified or reconstructed as defined by the Methane NSPS; and to confirm that these sets of requirements have independent triggers in the Methane NSPS.

We also ask that EPA clarify that the leak detection and repair requirements for fugitive emissions at well sites and compressor stations will not prevent operators from using atmospheric tanks at these sites. While the proposed Methane NSPS exempts storage vessels with a PTE of less than 6 tpy from the definition of an affected facility for purposes of the storage vessel control rules found at §§ 60.5395a and 60.5397a, the Methane NSPS is unclear as to how these storage vessels with a PTE under 6 tpy will be treated under the fugitive monitoring requirements and how they fit within the definition of "the collection of fugitive emissions components" at a well site or compressor station. Thus, while it appears at first that storage vessels with less than 6 tpy of emissions do not have to meet additional requirements under the Rules, operators may nonetheless find themselves forced to make expensive upgrades to storage

vessels in order to come into compliance with the fugitive monitoring requirements unless EPA clarifies the Methane NSPS.

In order to save the industry from unwarranted burdens further detailed below, we ask that EPA clarify that the normal venting of gas from atmospheric tanks is not considered a fugitive emission. The definition of "fugitive emission component" currently exempts "[d]evices that vent as part of normal operations." Atmospheric tanks are designed to vent VOC and methane emissions for both safety and pragmatic reasons. As explained above, these tanks must "breathe" in order to let off excess pressure and prevent the tank from becoming a safety hazard. EPA should clarify that these atmospheric tanks are vented as part of normal operations, and that the venting is therefore exempt from the definition of "fugitive emissions component" in the Methane NSPS.

In addition, these vessels are equipped with openings known as "thief hatches" that are used by operators to measure the volume of oil inside the tank before and after transfers to shipping trucks. These and other openings are also used to check for, or repair potential problems with storage vessels. It is our understanding that the definition of "fugitive emissions component" intends to exempt these practices, so that emissions resulting from opening thief hatches and other openings on storage vessels during these routine operations will not be considered fugitive emissions. The definition explicitly references these openings, but it is our understanding, based on the language in § 60.5411a(b)(2)-(3), that EPA only intends to require operators to equip these openings with proper mechanisms to ensure that the openings are properly seated and sealed when these are not being opened for the reasons enumerated in the regulations.

As we understand the Methane NSPS, well sites can meet the fugitive emissions requirements by ensuring that the seals on thief hatches do not allow for emissions when the hatch is closed. We do not read the Methane NSPS to prevent operators from opening thief hatches and other tank openings. We believe that this reading is in keeping with both the proposed regulatory text and EPA's current method of implementing Subpart OOOO. We would also note that many facilities already subject to Subpart OOOO currently use these same tanks and practices. We ask EPA to confirm that this reading is correct, and to add language to the definition of "fugitive emission component" clarifying that opening thief hatches and other openings that are opened for the reasons enumerated in § 60.5411a(b)(2) are considered "[d]evices that vent as part of normal operations" and are thus exempt from the definition of "fugitive emission component." As discussed more thoroughly below, this definition is necessary to prevent excessive burdens on upstream oil and gas operators.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Joe Strickling, Operations Manager

Commenter Affiliation: Patriot Resources, Inc.

Document Control Number: EPA-HQ-OAR-2010-0505-6978

Comment Excerpt Number: 5

Comment: EPA should clarify that well sites subject to these rules may continue to use atmospheric tanks.

Based on both the proposed text of the Methane NSPS, and the current implementation of EPA's Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution, codified at 40 C.F.R. Part 60 ("**Subpart OOOO**"), it is our understanding that owners and operators of affected well sites and affected storage vessels can continue the longstanding industry practice of using atmospheric tanks to store oil. We think that the proposed Rules allow sites to continue to use existing atmospheric tanks, and that the industry will be able to add new atmospheric tanks in the future. We believe that this reading is in keeping with EPA's previous requirements under Subpart OOOO and ask that EPA confirm this reading.

At a typical well site, oil, gas, and water flow through a single pipeline from the wellhead to a separator. The separator is essentially a large tank, where gas rises to the top, water sinks to the bottom, and oil fills the middle. From the separator, both oil and water flow into separate storage vessels. These storage vessels, known as "atmospheric tanks" are not pressurized. Instead, they are designed to "breathe" for both safety and practicality purposes. When dissolved gas within the tanks creates pressure, the tanks are designed to allow the gas to be released so that the tanks do not explode or cause other safety hazards. These tanks are commonly used throughout the industry and cost around \$10,000 per tank. Many of these storage tanks are already subject to emission reduction controls under Subpart OOOO. For example, based on the requirements in Subpart OOOO, Patriot Resources tanks have been connected to a qualified vapor **combustion** unit ("VCU"), which reduce the volatile organic compounds ("VOC") and methane emissions from the vessels by 95 percent of designed flash vapors.

If EPA's final Methane NSPS and CTG do not allow for tanks that vent and "breathe" in the way that atmospheric tanks are designed to, then the industry will be forced to replace these atmospheric tanks with pressurized storage vessels at a tremendous cost and with additional safety concerns that are not justified by the minute additional methane reductions that would result. Given the severe economic consequences that replacing these tanks could have on the industry, we ask for EPA to confirm that the Methane NSPS allows for their use.

It is our understanding that under proposed § 60.5365a(e) of the Methane NSPS, new, modified, or reconstructed storage vessels with natural gas emissions below 6 tons per year ("tpy") do not have to meet any additional control requirements, and vapors sent to a VRU do not count towards the vessel's potential to emit ("PTE"). This reading is in keeping with EPA's previous clarification of Subpart OOOO and we believe that it is the correct reading of the proposed Methane NSPS. However, because this provision could be read in a way that would make it infeasible to use atmospheric tanks, we note that the oil and gas industry has already raised concerns over the ambiguity in the storage vessel requirements with regard to Subpart OOOO, and we incorporate by reference the petitions for reconsideration and clarification of storage vessel requirements filed in response to Subpart OOOO.

In response to those previous concerns, EPA amended Subpart OOOO, including a clarification that the PTE calculation does not include any vapor recovered and routed to a process. Specifically, EPA explained that:

Our September 28, 2012, letter clarified that the cover and closed-vent requirements must be met when VRU is used to meet the 95 percent reduction emission standards. That said, we previously determined that routing of vapor through a cover and properly operated closed-vent system would recover all vapor routed to the system as long as the VRU is operating (i.e., 95 percent of the vapor being routed to a line when operating for 95 percent of the time). In light of the above, as long as the VRU is operated consistent with those requirements, we believe that it is appropriate to exclude 95 percent of the vapor that would otherwise be emitted if not recovered when determining PTE for purposes of determining affected facility status. As a result of this comment, and based on our prior clarification of this issue, the final amendments to § 60.5365(e) include a provision that "any vapor from the storage vessel that is recovered and routed to a process through a VRU designed and operated as specified in this section is not required to be included in the determination of VOC potential to emit for purposes of determining affected facility status."

Further, we have added language to § 60.5365(e) that provides for this adjustment of PTE as long as (1) the storage vessel is operated in compliance with cover requirements in § 60.5411(b) and the closed-vent system ["CVS"] requirements in § 60.5411(c), which has a requirement that the CVS (including the VRU) is operational at least 95 percent of the time, and that the operator maintain records demonstrating compliance with these requirements. We were concerned that, should a VRU be removed or operated inconsistent with the conditions that were the basis for the PTE reduction following the PTE determination for assessing whether the storage vessel is an affected facility, emissions could increase without the storage vessel being subject to control. To address that possibility, we have added language to § 60.5365(e) such that, in the event of removal of apparatus that recovers and routes vapor to a process or operation that is inconsistent with the conditions for qualifying for the PTE reduction, the owner or operator would be required to determine PTE from the storage vessel within 30 days of such removal or operation. If the PTE is determined to be 6 tpy VOC or more, then the storage vessel would be an affected facility and subject to the control requirements in § 60.5395. We believe this approach will help avoid circumvention of the NSPS.

Given both the consistency in text between Subpart OOOO and the Methane NSPS, and EPA's statements in the preamble to the Methane NSPS suggesting that facilities already regulated under Subpart OOOO would not need additional controls to come into compliance with the Methane NSPS, we believe that § 60.5365a(e) of the Methane NSPS is correctly read to allow for the use of atmospheric tanks that comply with the existing Subpart OOOO control requirements.

We ask EPA to further clarify that even if a well site is modified and becomes subject to the fugitive-emissions monitoring portions of the Methane NSPS, no existing storage vessel will be required to comply with the new control requirements in the Methane NSPS, unless the existing storage vessel is itself modified or reconstructed as defined by the Methane NSPS; and to confirm that these sets of requirements have independent triggers in the Methane NSPS.

We also ask that EPA clarify that the leak detection and repair requirements for fugitive emissions at well sites and compressor stations will not prevent operators from using atmospheric tanks at these sites. While the proposed Methane NSPS exempts storage vessels

with a PTE of less than 6 tpy from the definition of an affected facility for purposes of the storage vessel control rules found at §§ 60.5395a and 60.5397a, the Methane NSPS is unclear as to how these storage vessels with a PTE under 6 tpy will be treated under the fugitive monitoring requirements and how they fit within the definition of "the collection of fugitive emissions components" at a well site or compressor station. Thus, while it appears at first that storage vessels with less than 6 tpy of emissions do not have to meet additional requirements under the Rules, operators may nonetheless find themselves forced to make expensive upgrades to storage vessels in order to come into compliance with the fugitive monitoring requirements unless EPA clarifies the Methane NSPS.

In order to save the industry from unwarranted burdens further detailed below, we ask that EPA clarify that the normal venting of gas from atmospheric tanks is not considered a fugitive emission. The definition of "fugitive emission component" currently exempts "[d]evices that vent as part of normal operations." Atmospheric tanks are designed to vent VOC and methane emissions for both safety and pragmatic reasons. As explained above, these tanks must "breathe" in order to let off excess pressure and prevent the tank from becoming a safety hazard. EPA should clarify that these atmospheric tanks are vented as part of normal operations, and that the venting is therefore exempt from the definition of "fugitive emissions component" in the Methane NSPS.

In addition, these vessels are equipped with openings known as "thief hatches" that are used by operators to measure the volume of oil inside the tank before and after transfers to shipping trucks. These and other openings are also used to check for, or repair potential problems with storage vessels. It is our understanding that the definition of "fugitive emissions component" intends to exempt these practices, so that emissions resulting from opening thief hatches and other openings on storage vessels during these routine operations will not be considered fugitive emissions. The definition explicitly references these openings, but it is our understanding, based on the language in § 60.5411a(b)(2)-(3), that EPA only intends to require operators to equip these openings with proper mechanisms to ensure that the openings are properly seated and sealed when these are not being opened for the reasons enumerated in the regulations.

As we understand the Methane NSPS, well sites can meet the fugitive emissions requirements by ensuring that the seals on thief hatches do not allow for emissions when the hatch is closed. We do not read the Methane NSPS to prevent operators from opening thief hatches and other tank openings. We believe that this reading is in keeping with both the proposed regulatory text and EPA's current method of implementing Subpart OOOO. We would also note that many facilities already subject to Subpart OOOO currently use these same tanks and practices. We ask EPA to confirm that this reading is correct, and to add language to the definition of "fugitive emission component" clarifying that opening thief hatches and other openings that are opened for the reasons enumerated in § 60.5411a(b)(2) are considered "[d]evices that vent as part of normal operations" and are thus exempt from the definition of "fugitive emission component." As discussed more thoroughly below, this definition is necessary to prevent excessive burdens on upstream oil and gas operators.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Public Hearing Comments On Proposed Climate, Air Quality, and Permitting Rules for the Oil and Natural Gas Industry; Wednesday, September 23, 2015; 9:00 AM - 2:40 PM; Public Hearing #2 - Dallas, Texas

Commenter Affiliation: None

Document Control Number: EPA-HQ-OAR-2010-0505-7336

Comment Excerpt Number: 107

Comment: Right now, there are pieces of equipment omitted from being regulated, like storage vessels, that are covered under your VOC standards but are not under the methane standards. That could have been just a regulatory oversight. But make sure to check into that if you want storage vessels to be regulated.

Response: In this rulemaking, the EPA did not propose GHG standards for storage vessels. The EPA plans to seek additional information on this source via an information collection request.

Commenter Name: T. Bacci

Commenter Affiliation: Citizen

Document Control Number: EPA-HQ-OAR-2010-0505-6471

Comment Excerpt Number: 4

Comment: We urge you to improve the proposed rules to include:

- Several key pieces of equipment that were omitted from the proposal that emit methane and harmful VOCs:
 - Storage vessels, which were covered under the VOC standards but are not included in the methane proposal

Response: See response to DCN EPA-HQ-OAR-2010-0505-7336, Excerpt 107.

Commenter Name: S. Hathaway

Commenter Affiliation: Citizen

Document Control Number: EPA-HQ-OAR-2010-0505-6473

Comment Excerpt Number: 3

Comment: We urge you, even knowing that it's futile, to improve the proposed weak rules to include:

- Several key pieces of equipment that were omitted from the proposal that emit methane and harmful VOCs:

- Storage vessels, which were covered under the VOC standards, but are not included in the methane proposal;

Response: See response to DCN EPA-HQ-OAR-2010-0505-7336, Excerpt 107.

Commenter Name: Julie Archer, Project Manager; and David McMahon, J.D., Co-Founder
Commenter Affiliation: West Virginia Surface Owners' Rights Organization (WVSORO)
Document Control Number: EPA-HQ-OAR-2010-0505-7066
Comment Excerpt Number: 4

Comment: In addition, we urge you to improve the proposed rules to: Include several key pieces of equipment that were omitted from the proposal that emit methane and harmful VOCs:

Storage vessels, which were covered under the VOC standards but are not included in the methane proposal;

Response: See response to DCN EPA-HQ-OAR-2010-0505-7336, Excerpt 107.

Commenter Name: Cyrus Reed, Conservation Director
Commenter Affiliation: Lone Star Chapter, Sierra Club
Document Control Number: EPA-HQ-OAR-2010-0505-5418
Comment Excerpt Number: 13

Comment: In addition, EPA must include in the final rule emission control requirements for storage tanks of all sizes at both wells and at gathering and boosting stations in the production segment.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Jonas Kron
Commenter Affiliation: Trillium Asset Management, LLC
Document Control Number: EPA-HQ-OAR-2010-0505-6794
Comment Excerpt Number: 12

Comment: In particular, we urge the EPA to strengthen the proposal by covering the following equipment and practices: Storage vessels.

Based on our research, we believe that these four areas are linked to meaningful amounts of methane emissions. Furthermore, studies strongly suggest that there are low cost controls that exist for all areas.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Camilla Feibelman

Commenter Affiliation: Rio Grande Chapter of the Sierra Club

Document Control Number: EPA-HQ-OAR-2010-0505-6895

Comment Excerpt Number: 11

Comment: In addition, EPA must include in the final rule emission control requirements for storage tanks of all sizes at both wells and at gathering and boosting stations in the production segment.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Darin Schroeder, David McCabe, Lesley Fleishman and Conrad Schneider

Commenter Affiliation: Clean Air Task Force et al.

Document Control Number: EPA-HQ-OAR-2010-0505-7062

Comment Excerpt Number: 97

Comment: Storage vessels are significant sources of methane emissions, estimated at 533,930 tons per year according to the GHGI and with 94,666 tons reported under the GHGRP. Moreover, as with many other sources in the oil and gas industry, there is reason to believe that storage vessels account for significantly more methane pollution than currently estimated. EPA has addressed storage vessel air pollution to some extent in the 2012 VOC NSPS and NESHAPs and amendments to those standards, and has begun another process under section 112 that could lead to additional control of storage vessels, *see* 80 Fed. Reg. 74,068 (November 27, 2015) (Oil and Natural Gas Sector: National Emission Standards for Hazardous Air Pollutants, Request for Information). However, as explained above, such standards do not absolve the agency of its responsibilities to address methane from storage vessels under section 111, and the regulations currently in place leave a number of storage vessels uncontrolled. We urge EPA to address storage vessels in this rulemaking, including whether additional performance standards for methane covering storage vessels are appropriate.

Response: See response to DCN EPA-HQ-OAR-2010-0505-7336, Excerpt 107.

Commenter Name: Robert Winkler

Commenter Affiliation: International Institute for Risk Management, Washington University

Document Control Number: EPA-HQ-OAR-2010-0505-5348

Comment Excerpt Number: 4

Comment: We request a set of changes that clarify and ensure compliance with the underlying obligation of all lessees to minimize waste of natural gas. Operators must operate in a manner that protects the environment and conserves mineral resources as follows:

Conducting all operations in a manner which ensures the proper handling, measurement, disposition, and site security of leasehold production; which protects other natural resources and environmental quality; and which protects life and property. The operating rights owner or operator shall conduct all operations in a manner and which, as a first priority, protects the environment and public health including by minimizing waste and which also results in maximum ultimate economic recovery of oil and gas and, as a second priority, results in with minimum waste and with minimum adverse effect on ultimate recovery of other mineral resources.

COGCC BLM should add a definition of “best available technology for oil and gas operations” as follows:

Best Available Technology means the following:

(1) Best Available Technology shall result in an emission rate that does not exceed the natural gas emissions performance standard.

(2) Best Available Technology at a minimum includes the use of the following controls:

Vapor Recovery Units—Operators shall employ vapor recovery units with all storage tanks that recover, at minimum, 99 percent of all vapors. Recovered vapors shall not be leaked to the ambient air.

(3) Best Available Technology shall also include any measures, technologies, or processes that become available after the effective date of these regulations that allow for recovery of additional natural gas, unless the Operators have demonstrated to the satisfaction of COGCC that such technologies are not technically feasible or pose a significant, elevated health or safety risk.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: William C. Allison

Commenter Affiliation: Colorado Department of Public Health and Environment

Document Control Number: EPA-HQ-OAR-2010-0505-6876

Comment Excerpt Number: 16

Comment: Other than a number of implementation amendments based on administrative reconsideration petitions, EPA did not propose new requirements under NSPS OOOOa for storage vessels. Therefore, NSPS OOOOa continues to define the refracturing of a well as not modifying the associated storage vessel. In contrast, Colorado considers the refracturing of a well to modify the associated storage vessel. The Division continues to believe that EPA should

consider the fracturing or refracturing of a well to be a modification to the storage vessel, because it will result in an increase in production and associated increase in emissions from the well operation, which warrant regulation.

a. Produced water storage vessels

EPA also did not propose new requirements for produced water storage. The Division recommends that the EPA include emission or control requirements for produced and flowback water facilities, as stated in previous comments. The Division has found that produced and flowback waters have the potential to emit large quantities of VOC and HAP, with some water treatment, storage, or evaporation facilities having a potential to emit greater than 250 tons of VOC per year. Further, the Division has found that it is cost effective to require sources to install water treatment equipment which will reduce the emissions of VOC and HAP from the facility. The Division suggests EPA consider this information when finalizing NSPS OOOOa. The Division previously provided emission and control technology information concerning produced and flowback water facilities, and has reattached the data (Appendix A) for reference.

Response: Subpart OOOOa specifies that a well is an affected facility and a storage vessel is a separate affected facility. Therefore, in compliance with §60.14, which defines a modification in terms of a specific existing facility, we are maintaining in the final rule that modification of a well does not affect the modification status of other equipment located at the well. To further clarify this point, §60.5365a(a)(3) states, “Except as provided in §60.5365a(i)(3), refracturing of a well, by itself, does not affect the modification status of other equipment, process units, storage vessels, compressors, pneumatic pumps, or pneumatic controllers.”

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 90

Comment: EPA Should Clarify That Hydraulic Fracturing Or Refracturing Does Not Constitute A Modification To A Tank.

When a well is refractured, it is likely that the storage vessel that receives the liquids from the well will see an increase in throughput from the time period just prior to the refracture (even though it is unlikely that it will increase throughput from the original throughput). Proposed paragraph §60.5365a(a)(3) is clear that in this situation, refracturing a well does not affect the modification status of other downstream equipment, including storage vessels. API supports this clarification.

However, the rule does not address similar situations where well activity could increase the throughput of a tank for which Subpart OOOOa applicability has already been determined. A few examples include when a new well (hydraulically fractured or not) is tied into the storage

vessel, when another storage vessel at the site is taken out of service, or the liquids flow at a site with multiple tanks is altered.

To clarify these situations, API suggests the addition of a paragraph §60.5365a(e)(6). Suggested language is as follows:

(6) For the purposes of this Subpart, after the initial applicability determination for a storage vessel has been conducted in accordance with the requirements of paragraph (e) and (e)(1), situations that increase the throughput of that storage vessel shall not be considered modifications and shall not require a new applicability determination.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Greg Amimon, Director,
Commenter Affiliation: Environmental Northern Natural Gas, Berkshire Hathaway Energy Pipeline Group (BHE)
Document Control Number: EPA-HQ-OAR-2010-0505-6933
Comment Excerpt Number: 5

Comment: The EPA should provide criteria on the definition of "modification" of storage wells in aquifer reservoirs or salt formations used to store natural gas.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Howard J Feldman
Commenter Affiliation: American Petroleum Institute
Document Control Number: EPA-HQ-OAR-2010-0505-6884
Comment Excerpt Number: 88

Comment: The Language For Applicability In Subpart OOOOa Needs To Be More Clear About Tanks That Do Not Receive Liquid From Hydraulically Fractured Wells (Time Limit)

Proposed paragraph §60.5365a(e) specifies that the potential for VOC emissions must be calculated “for a 30-day period of production prior to the applicable emission determination deadline specified in this section.” Paragraph §60.5365a(e)(1) then specifies this deadline for storage vessels receiving liquids from well affected facilities (i.e., a hydraulically fractured wells with a GOR greater than 300 scf/bbl) as “30 days after startup of production.” There are multiple issues with this paragraph.

First, there are no deadlines specified for newly constructed, reconstructed, or modified storage vessels that receive liquids from sources other than hydraulically fractured wells. Presumably,

EPA intends that such tanks with potential VOC emissions greater than 6 tons per year would be subject to the rule.

Second, for tanks that are not installed at the onset of production for a well, the 30 days after startup of production is not relevant. Rather, this period should be based on 30 days after the storage vessel is put into service.

Therefore, API recommends the following amendments to the proposed provisions of §60.5365a(e) and (e)(1).

(e) Each storage vessel affected facility, which is a single storage vessel with the potential for VOC emissions equal to or greater than 6 tpy as determined according to this section, except as provided in paragraphs (e)(1) through (4) of this section. The potential for VOC emissions must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline specified in paragraph (e)(1) of this section. The determination may take into account requirements under a legally and practically enforceable limit in an operating permit or other requirement established under a Federal, State, local or tribal authority.

(e)(1) For each new, modified or reconstructed storage vessel receiving liquids pursuant to the standards for well affected facilities in §60.5375a, including wells subject to §60.5375a(f), you must determine the potential for VOC emissions within 30 days after startup of production (i.e., the date that the storage vessel is placed into service).

Response: The EPA agrees that the compliance timing for storage vessel affected facilities not receiving liquids from a hydraulically fractured or refractured well is not clearly specified in proposed rule. Therefore we have amended §60.5365a(e)(1) in the final rule as follows:

(1) For each new, modified or reconstructed storage vessel you must determine the potential for VOC emissions within 30 days after liquids first enter the storage vessel, except as provided in paragraph (e)(3)(iv) of this section. For each new, modified or reconstructed storage vessel receiving liquids pursuant to the standards for well affected facilities in § 60.5375a, including wells subject to § 60.5375a(f), you must determine the potential for VOC emissions within 30 days after startup of production of the well (emphasis added).

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 91

Comment: EPA Should Modify The Definition Of “Maximum Daily Average Throughput” To Reflect Their Intentions Regarding Storage Tank Applicability Determinations

For the applicability determination for storage vessel affected facilities, proposed §60.5365a(e)(1) requires that the emissions must be calculated “The potential for VOC emissions must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput determined for a 30-day period of production prior to the applicable emission determination deadline specified in this section.” While the term “maximum average daily throughput” is both a plain language and mathematical contradiction, EPA attempted to clarify this term in proposed §60.5430a. This definition is as follows:

“Maximum average daily throughput means the earliest calculation of daily average throughput during the 30-day PTE evaluation period employing generally accepted methods.”

While this definition clarifies the “maximum average” aspect of the term, there are still numerous issues that need to be addressed with this definition.

First, the inclusion of the word “earliest” is problematic and it adds no value. Proposed §60.5365a(e) requires that “you must determine the potential for VOC emissions within 30 days after startup of production.” Since the determination must be done for a 30-day period within 30 days after startup of production, there is only one 30 day period. The period is well defined. Therefore, EPA should remove the word “earliest” from this definition.

Second, requiring the maximum daily average to be calculated based strictly on a calculation of the average throughput for the first 30 days of production does not recognize the situations experienced in practice. The determination should be based on the maximum daily throughput at steady state conditions, which is often not likely represented by the calculation of the average throughput for the first 30 days. It is true that typically the initial 30-day period will represent the maximum production the well is expected for the life of the well due to reservoir depletion. However, the first 30-days of production are typically non-steady state operations, containing both shut-in periods for operational reasons and short, spike flow periods (minutes to hours) after the production valves are opened after the well has been shut-in. Including either the peak flow periods or shut-in periods adulterates the average throughput experienced during the initial 30 days of production. Basing the determination solely on the average throughput for this period could result in tanks with the potential to emit VOC at levels much higher than 6 tons per year not being subject (e.g., if there were multiple shut-in days), and tanks with potential VOC emissions much lower than 6 tons per year being subject (e.g., if there were numerous spikes). The appropriate throughput, which is entirely consistent with EPA’s intention, is that the applicability determination be based on maximum daily throughput during the initial 30-day period that represents steady state conditions. Finally, the concept of generally accepted methods is already clear in §60.5365a(e). Repeating it in the definition of maximum average daily throughput is unnecessary and potentially confusing.

Therefore, API suggests the following change to the proposed definition of maximum average daily throughput.

“Maximum average daily throughput means the ~~earliest calculation of~~ daily average throughput during the 30-day PTE evaluation period that represents steady-state conditions ~~employing generally accepted methods.~~”

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Will Whisenant, Safety and Security Operations Coordinator

Commenter Affiliation: Virginia Oil and Gas Association (VOGA)

Document Control Number: EPA-HQ-OAR-2010-0505-7047

Comment Excerpt Number: 13

Comment: Tanks that have never exhibited the capacity to release 6 tons/yr or more should remain exempt from the RACT requirements.

- ❑ No blanket regulations of technology such as vapor recovery units should be penned. Many low volume wells do not have the need for VRUs and puts additional financial strain on small volume producers.
- ❑ Grouping oil well methane losses and natural gas production wells together is not a fair tactic and should not be regulated with one blanket proposal. If the actual issues that need to be address are in oil well releases of methane, tailor the regulation to oil wells instead of lumping the natural gas producers in with the regulations.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Jill Morrison

Commenter Affiliation: Powder River Basin Resource Council

Document Control Number: EPA-HQ-OAR-2010-0505-7240

Comment Excerpt Number: 7

Comment: We request and recommend that EPA lower the proposed volatile organic compounds (VOC) emission threshold for storage tanks from 6 tons per year to 4 tons per year. Wyoming currently enforces the 4 tons per year threshold for tank flashing emissions in Wyoming's Upper Green River Basin area, and requires controls for all tanks, regardless of emission levels, in the Jonah Pinedale area.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Public Hearing Comments On Proposed Climate, Air Quality, and Permitting Rules for the Oil and Natural Gas Industry; Wednesday, September 23, 2015; 9:00 AM - 7:55 PM; Public Hearing #1 - Denver, Colorado

Commenter Affiliation: None

Document Control Number: EPA-HQ-OAR-2010-0505-7337

Comment Excerpt Number: 231

Comment: EPA should lower volatile organic compound thresholds for storage tanks from 4 -- from 6 tons a year to 4 tons per year.

Thank you for the opportunity to comment. We know industry can and does perform at a higher standard in many states. Strengthening the EPA rules should mean a greater standard of performance in every state.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Public Hearing Comments On Proposed Climate, Air Quality, and Permitting Rules for the Oil and Natural Gas Industry; Wednesday, September 23, 2015; 9:00 AM - 7:55 PM; Public Hearing #1 - Denver, Colorado

Commenter Affiliation: None

Document Control Number: EPA-HQ-OAR-2010-0505-7337

Comment Excerpt Number: 237

Comment: We also request that the EPA lower the proposed VOCs emission threshold for storage tanks from 6 tons per year to 4 tons per year. Wyoming already enforces the 4-tons-per-year threshold for tank-flashing emissions in Wyoming's Upper Green River Basin area, and requires controls for all tanks, regardless of the emission levels, in the Jonah-Pinedale area.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 92

Comment: Under §60.5395a(A)(3), The Re-Installation Of Controls To Achieve 95% Should Not Be Required When Liquids From The Well Following Fracturing Or Refracturing Are Routed To The Storage Vessel Affected Facility If Emissions Do Not Increase To Greater Than 4 TPY

Section §60.5395a(a)(3) includes an alternative emission limitation to allow for situations when production declines and the uncontrolled VOC emissions from the storage vessel fall below 4 tpy for 12 consecutive months. This is entirely consistent with the requirements in §60.5395(a)(3) of Subpart OOOO. In the preamble for the final amendments that added this alternative to §60.5395(a)(3) of Subpart OOOO, EPA stated the following:

“In light of the cost effectiveness, the secondary environmental impacts and the energy impacts, we have concluded that the BSER for reducing VOC emission from storage vessel affected

facilities is not represented by continued control when their sustained uncontrolled emission rates fall below 4 tpy.” (78 FR 58429, September 23, 2013)

In proposed §60.5395a(a)(3)(ii), controls would need to be re-instated if the emissions increase to 4 tpy or greater based on one month’s emissions. API does not take issue with this requirement.

However, paragraph §60.5395a(a)(3)(i) also requires that controls be re-instated if the well feeding the storage vessel affected facility undergoes fracturing or refracturing as soon as liquids are routed to the storage vessel, without regard to the VOC emissions level. This requirement is consistent with Subpart OOOO. EPA justified this by stating that this situation is “likely to release substantial amounts of vapor if not controlled right away due the initially high liquid flow and flash emissions from freshly fractured or refractured wells. We also believe that potential emissions associated with fracturing and refracturing of a well are unlikely to meet the 4 tpy uncontrolled emission rate.” (78 FR 58431, September 23, 2015)

API does not believe that this requirement is warranted. While it is true that production, and storage tank emissions, would likely increase after the fracturing or refracturing, EPA cannot arbitrarily assume that this reduction would automatically result in VOC emissions greater than 4 tpy. EPA provided no data to support this assertion. EPA has clearly stated that BSER is not represented by control when emissions are less than 4 tpy, and this requirement has the clear potential to require control on tanks that is at a level that EPA has clearly determined is not cost effective.

Therefore, EPA should remove paragraph §60.5395a(a)(3)(i) and only rely on the requirements currently in paragraph §60.5395a(a)(3)(ii); if indeed the fracturing or refracturing does result in a VOC emissions level greater than 4 tpy, then the tank would be required to be controlled for at least the next 12 months. However, if the VOC emissions were below 4 tpy after the fracturing or refracturing, this would not result in the re-installation of controls that are clearly not cost effective.

Therefore, API recommends the following change to the final Subpart OOOOa.

§60.5395a(a)(3) Maintain the uncontrolled actual VOC emissions from the storage vessel affected facility at less than 4 tpy without considering control. Prior to using the uncontrolled actual VOC emission rate for compliance purposes, you must demonstrate that the uncontrolled actual VOC emissions have remained less than 4 tpy as determined monthly for 12 consecutive months. After such demonstration, you must determine the uncontrolled actual VOC emission rate each month. The uncontrolled actual VOC emissions must be calculated using a generally accepted model or calculation methodology, and the calculations must be based on the average throughput for the month. You must comply with paragraph (a)(2) of this section within 30 days of the monthly determination if the monthly emissions determination required in this section indicates that VOC emissions from your storage vessel affected facility increase to 4 tpy or greater. ~~your storage vessel affected facility meets the conditions specified in paragraphs (a)(3)(i) or (ii) of this section.~~

~~(i) If a well feeding the storage vessel affected facility undergoes fracturing or refracturing, you must comply with paragraph (a)(2) of this section as soon as liquids from the well following fracturing or refracturing are routed to the storage vessel affected facility.~~

~~(ii) If the monthly emissions determination required in this section indicates that VOC emissions from your storage vessel affected facility increase to 4 tpy or greater and the increase is not associated with fracturing or refracturing of a well feeding the storage vessel affected facility, you must comply with paragraph (a)(2) of this section within 30 days of the monthly determination.~~

API also requests that the same changes be made to §60.5395(a)(3) of Subpart OOOO.

Another alternative would be for EPA to require control immediately as required in paragraph (ii), but then allow controls to be removed after 30 days if the increased production levels would not result in VOC emissions greater than 4 tpy. API does not recommend this solution as the installation costs of a control device can be substantial, but it would be preferred to the proposed requirement that would require that controls be operated for 12 additional months (when uncontrolled VOC emissions never exceeded 4 tpy) before they could be removed.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 94

Comment: EPA Has Not Justified The Change To Route Storage Vessel Emissions To A Process That Achieves 95% Control.

In proposed Subpart OOOOa, §60.5395a(b)(1) requires that emissions from storage vessel affected facilities be routed through a closed vent system to a control device that meets the requirements of §60.5412a(c) and (d). It also provides that, as an alternative, these emissions may be routed through a closed vent system “to a process that reduces VOC emissions by at least 95.0 percent.”

API objects to this 95 percent requirement, as EPA has not provided any justification or rationale for its inclusion. Therefore, it must be removed.

First, it is inconsistent with the analogous requirements for storage vessels in §60.5395(b)(1) of Subpart OOOO, as well as the requirements in A.2(b)(1) of the draft CTG. Further, the proposed parallel proposed requirements for centrifugal compressors at §60.5380(a)(2) and pneumatic pumps at §60.5393(b)(4) do not include this requirement. EPA has not explained or justified why this requirement would apply only to storage vessel affected facilities subject to Subpart OOOOa.

Second, EPA did not include any explanation or process in the proposed Subpart OOOOa detailing how to demonstrate compliance with this requirement. EPA did not provide any technical or other justification for the inclusion of this additional requirement when emissions from a storage vessel affected facility are routed to a process. In fact, API does not find any mention of the addition of this requirement in the preamble.

Finally, the CVS requirements in proposed paragraph §60.5411a(c)(2) already require that CVS be operational 95 percent of the year or greater when emissions are routed to a process. This further makes the proposed requirement in §60.5395a(b)(1) unnecessary.

Therefore, EPA should make the following change to the proposed requirements in §60.5395a(b)(1) for the final rule:

§60.5395a (b) Control requirements. (1) Except as required in paragraph (b)(2) of this section, if you use a control device to reduce VOC emissions from your storage vessel affected facility, you must equip the storage vessel with a cover that meets the requirements of §60.5411a(b) and is connected through a closed vent system that meets the requirements of §60.5411a(c), and you must route emissions to a control device that meets the conditions specified in §60.5412a(c) and (d). As an alternative to routing the closed vent system to a control device, you may route the closed vent system to a process ~~that reduces VOC emissions by at least 95.0 percent.~~

Response: The EPA agrees with the comment that emissions routed from a storage vessel affected facility that are routed to a process should be treated the same as emissions routed to a process from centrifugal compressors or pneumatic pumps. The EPA has made changes to the sections of the rule that required that the process achieve a 95 percent reduction in VOC emissions.

Commenter Name: Alvyn A. Schopp, Chief Administration Officer and Regional Vice President and Treasurer
Commenter Affiliation: Antero Resources Corporation
Document Control Number: EPA-HQ-OAR-2010-0505-6935
Comment Excerpt Number: 17

Comment: Antero objects to the proposed requirement 40 CFR § 60.5411(a)(c)(2) to require processes serving closed vent systems to be operational 95 percent of the year or greater.

USEPA proposed in 40 CFR § 60.5411(a)(c)(2) to require processes serving closed vent systems to be operational 95 percent of the year or greater. Antero objects to this requirement. The requirement seems tied to the 95 percent control efficiency requirement for the control device and does not clearly provide for the operational flexibility to route a closed vent system to both a process and a control device. Antero recommends that proposed 40 CFR § 60.5411(a)(c)(2) read as follows, "Each closed vent system that routes emissions to a process unit such as a VRU must achieve 95% or greater reduction in the mass content of VOC."

Response: See response to DCN EPA-HQ-OAR-2010-0505-6884, Excerpt 94.

Commenter Name: Cory Pomeroy, General Counsel

Commenter Affiliation: Texas Oil & Gas Association

Document Control Number: EPA-HQ-OAR-2010-0505-7058

Comment Excerpt Number: 70

Comment: Moreover, the proposal would add in proposed Section 60.5395a(b) that process devices must reduce emissions by 95 percent, a provision that was not included in the Subpart OOOO. To be consistent with CVS, the rule would need to state that process devices must operate 95 percent of the time as they are not emissions control devices and should not be subject to emission control verification requirements.

Response: See response to DCN EPA-HQ-OAR-2010-0505-6884, Excerpt 94.

Commenter Name: Cory Pomeroy, General Counsel

Commenter Affiliation: Texas Oil & Gas Association

Document Control Number: EPA-HQ-OAR-2010-0505-7058

Comment Excerpt Number: 71

Comment: EPA Should Add Certain Definitions for Storage Vessel Affected Facilities Routing Emissions to a Process.

EPA should add a definitions of “closed vent system” and “control device” consistent with NESHAP Subpart HH (40 C.F.R. § 60.761).

Closed-vent system should be defined to mean “a system that is not open to the atmosphere and is composed of piping, ductwork, connections, and if necessary, flow inducing devices that transport gas or vapor from an emission point to one or more control devices. If gas or vapor from regulated equipment is routed to a process (*e.g.*, to a fuel gas system), the conveyance system shall not be considered a closed-vent system and is not subject to closed-vent system standards.”

Control device should be defined to mean “any equipment used for recovering or volatile organic compound (VOC) vapors. Such equipment includes, but is not limited to, absorbers, carbon adsorbers, condensers, incinerators, flares, boilers, and process heaters. For the purposes of this subpart, if gas or vapor from regulated equipment is used, reused (*i.e.*, injected into the flame zone of an enclosed combustion device), returned back to the process, or sold, then the recovery system used, including piping, connections, and flow inducing devices, is not considered to be a control device or closed-vent system.”

Routing emissions to a process should not trigger initial or continuous compliance requirements applicable to control devices.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Eric Schaeffer, Sparsh Khandeshi and Adam Kron, Environmental Integrity Project (EIP) on behalf of Adrian Shelley III, Executive Director,

Commenter Affiliation: Air Alliance Houston et al.

Document Control Number: EPA-HQ-OAR-2010-0505-6953

Comment Excerpt Number: 17

Comment: EPA Must Require Better Monitoring to Assure Compliance with the 95-Percent Control Requirement for Storage Vessels and Must Not Weaken the Compliance Demonstration Requirements for Combustors

With respect to the Proposed Rule's requirements for storage vessels, EPA must require operators to control emissions by 95 percent at all times and remove the loopholes that allow operators to bypass controls and release emissions from pressure relief devices. Specifically, EPA must require operators who use VRUs to:

- (1) Monitor and report the amount of gas routed to VRUs and all gas released from PRDs (including valves, thief hatches, or other openings) on the storage vessel; and**
- (2) Design VRUs for the maximum expected surge of flashing, breathing, and working emissions that will be produced by the storage vessel.**

For operators who comply with the storage vessel requirements by using a combustor, EPA must require these operators to:

- (3) Reduce the total organic compound concentration at the outlet of the combustor to 20 ppm.**

Response: Concerning the commenter's request that combustor outlet concentration be limited to 20 ppm, see response to EPA-HQ-OAR-2010-0505-6953, Excerpt 19. The remainder of this comment raises issues beyond the scope of this rulemaking.

Commenter Name: Erik Schlenker-Goodrich

Commenter Affiliation: Western Environmental Law Center (WELC)

Document Control Number: EPA-HQ-OAR-2010-0505-6871

Comment Excerpt Number: 7

Comment: The same arguments also hold for storage tanks. We believe that it is improper for the EPA to assume away the possibility that the cumulative number of storage tanks at new or modified gas well sites may constitute a major source of methane emissions. Again, low cost control technologies; i.e. vapor recovery units, are proven and readily available. The EPA should include well-site compressors under the rules.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Roger A. Miller

Commenter Affiliation: Engineered Concepts, LLC

Document Control Number: EPA-HQ-OAR-2010-0505-6855

Comment Excerpt Number: 2

Comment: As complex centralized production facilities become more common, the VOC and methane emissions are becoming larger and more significant at the local level. EPA's should consider an approach similar to their proposed action on oil well flow back emissions. EPA comments:

"Compared to combustion alone, we believe that the combination of REC and combustion will maximize gas recovery and minimize venting to the atmosphere. Furthermore, the use of traditional combustion control devices (i.e. flares and enclosed combustion devices), present local emission impacts."

While flaring effectively controls both the methane and VOC emissions, significant improvements in vapor recovery have created reliable cost effective solutions allowing operators better options to meet their general duty to safely maximize resource recovery and minimize releases to the atmosphere.

In an effort to provide workable draft language, consistent with language proposed in the current rule Engineered Concepts proposes the following modifications to 60.5395a(a)2:

(2) Reduce VOC emissions by 95.0 percent within 60 days after startup. For storage vessel affected facilities receiving liquids pursuant to the standards for well affected facilities in § 60.5375a, all salable quality recovered gas must be routed to the gas flow line within days after startup of production as defined in § 60.5430a. In cases where salable quality gas cannot be directed to the flow line due to technical infeasibility, you must follow the requirements in paragraph (b) of this section.

This approach of maximizing gas recovery for new sources minimizes environmental impacts while maximizing economic value for operators, royalty owners, and the public at large.

If EPA has any questions please do not hesitate to contact me at (303) 478-7228 or at rogeraengineeredconcepts.com.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Public Hearing Comments On Proposed Climate, Air Quality, and Permitting Rules for the Oil and Natural Gas Industry; Wednesday, September 23, 2015; 9:00 AM - 7:55 PM; Public Hearing #1 - Denver, Colorado

Commenter Affiliation: None

Document Control Number: EPA-HQ-OAR-2010-0505-7337

Comment Excerpt Number: 89

Comment: I was a little concerned that you and I may not have exactly the same interests or same goals, but actually we do. It is to capture all the gas.

Over ten years ago, the CDPHE put in place regulations to reduce VOC emissions from oil storage tanks, in an effort to reduce the ground-level ozone in Colorado's Front Range. I've been here since '72, and we don't see the purple haze anymore. The CDPHE rules allow producers to either capture or incinerate vapors. However, no viable technologies existed to safely capture the gas at that time, so producers, understandably, chose to incinerate flash gas on-site. Those incinerators, also known as combustors or flares, now dot the landscape all over the Front Range and burn off VOCs with destruction efficiency ratings of 95 percent or better.

However, it's turned out that the gas flashing from the oil in the oil storage tanks is almost as energy rich as the oil itself, and as much -- and much more so than the natural gas that's produced in the well. For example, the natural gas used to heat this building has about 900 cubic feet -- or, I'm sorry, 900 BTU per cubic foot energy content; whereas, the flash gas coming off oil storage tanks has an energy content up to four times higher. We've seen it as high as 3600 BTU gas coming off those tanks. It is rich in natural gas liquids, including propane and natural gasolines.

The obstacle to recovering this gas has been that it becomes contaminated with oxygen while it's in the tanks; and the natural gas pipelines, understandably, will not accept such a mixture into their systems, leaving the producer, again, with little choice but to incinerate this very rich and valuable gas stream.

To put the situation in perspective, the average home in Colorado uses approximately 9,000 cubic feet of natural gas each year. Each combustor can incinerate up to eight times that amount each day, enough to heat up to 2800 homes. There are hundreds, if not thousands, of combustors in use in Colorado today. I believe this gas, currently considered a waste product, has a higher and better purpose. If we recover it and put it to beneficial use, we are both reducing waste and emissions.

Six years ago EcoVapor began developing technology to capture this gas and remove the oxygen so that it could be sold and used along with conventional natural gas. We have worked with several producers here in the Front Range, both large and small, testing the process before putting it into commercial service five years ago. Since that time, we've recovered enough gas to

heat over 100,000 homes while preventing thousands of tons of pollutants from entering our atmosphere.

There's a chart attached to the testimony that I handed out. Can you hand out those copies?

This slide represents the – on the left side, the emissions, in tons per year, of a flare -- or two flares, actually, that would be combustion up to 160 MCFs a day of 2800 BTU gas. That's a -- 2800 to 3000 BTU is a normal range. And you can see that 77 tons per year. Using our system, that gets it down to 7.5 tons, over 90 percent reduction. And that -- and those emissions include the engine that powers that system. We're also looking at an electric model as well.

This technology now provides producers with a real choice that didn't exist when these regulations were first put in place. To be clear, not every well site is a candidate for our system, as many wells produce either no oil or too little to make the installation cost effective; nor are they a lifetime fit for any well, as production eventually declines to the point where, again, our systems are not justified. But new and recent sites, which are producing the highest rates of oil, also produce the bulk of the flash gas, and that can be economically captured.

Governor Hickenlooper is aware and supportive of our technology, as are officials with the CDPHE, COGCC, and EPA Region 8. We look forward to working with more producers, to capture more gas and turn it from waste into valuable products and simultaneously reduce emissions.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Laredo Petroleum

Commenter Affiliation: Laredo Petroleum

Document Control Number: EPA-HQ-OAR-2010-0505-6474

Comment Excerpt Number: 4

Comment: Is a VRU considered a control device or a process device (referenced on page 56664, column 1, under §60.5365a (e)(3))?

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 51

Comment: EPA's Request For Details On Pressure Monitoring Systems For Storage Vessels Is Unnecessary.

In the preamble, EPA requests comment as to what types of cost-effective pressure monitoring systems can be utilized to ensure that the pressure settings on relief devices and thief hatches are not lower than the operating pressure in the closed vent to the control device and what types of reporting from such systems should be required, such as through a supervisory control and data acquisition (SCADA) system (FR 56649).

While recognizing the importance of proper design and operation of equipment, it is inappropriate for EPA to be considering this level of engineering detail as part of rulemaking. EPA has already specified requirements for inspecting closed vent systems and performing inspections to identify any leaks and these measures are adequate to address any potential issues related to how systems are designed and operated. Additionally, the design of well pads and tank batteries undergo engineering and safety reviews as part of their development. These reviews serve to ensure that materials flowing from wells are appropriately captured and routed as intended.

Response: The EPA requested comment on the types of cost-effective pressure monitoring systems that can be utilized to ensure that the pressure settings on relief devices are not below the operating pressure in the closed vent to the control device and what types of reporting from such systems should be required. Commenters provided information regarding thief hatches and the potential cost of controls. The EPA is continuing to evaluate the information that we received, but we are not finalizing requirements for a pressure monitoring system at this time.

Commenter Name: Howard J Feldman

Commenter Affiliation: American Petroleum Institute

Document Control Number: EPA-HQ-OAR-2010-0505-6884

Comment Excerpt Number: 89

Comment: EPA Should Provide Clarity For The Process For Assessing Applicability For Replacement Tanks

Proposed paragraph §60.5365(e)(4) attempts to provide the requirements for determination of applicability for storage tanks that replace existing tanks. However, this paragraph is very confusing in existing OOOO, thus leaving the regulated community and state and local air pollution agencies reeling. This has resulted in various and inconsistent interpretations and policies in the implementation of Subpart OOOO. API recommends that EPA correct these issues in Subpart OOOOa.

Paragraph (e)(4) specifically applies to “each new, reconstructed, or modified storage vessel with startup, startup of production, or which is returned to service”. While there are numerous questions and issues related to “returned to service” that are discussed below, the tanks EPA that is attempting to address by “each new, reconstructed, or modified storage vessel with startup of production” is not clear. These criteria would apply to every storage vessel, leaving question about the relationship between the basic applicability provisions in paragraph (e) apply versus those in (e)(4). API believes that it is EPA’s intent that paragraph (e)(4) apply to storage vessels

that replace existing storage vessels. There are various scenarios under which a tank may be added. For several of these scenarios, the existing provisions in Subpart OOOO, and the proposed provision in Subpart OOOOa, are not clear. Table 22-1 describes those scenarios, along with API's interpretation of EPA's intention. After the scenarios, API provides suggested regulatory language to clarify these situations moving forward.

[Table 25-1 Interpretation of EPA's Intention for the Applicability of the Storage Vessel Provisions, Subparts OOOO and OOOOa for Various Scenarios]

API suggests the following that proposed §60.5365a(e)(4) be entirely replaced with the following, and that (e)(5) be added as follows.

(4) Each storage vessel that was constructed, reconstructed, or modified after September 18, 2015 that replaces an existing storage vessel shall determine applicability according to the provisions in (e)(4)(i) or (ii).

(i) If the storage vessel being replaced is a storage vessel affected facility, the new storage vessel is an affected facility.

(ii) If the storage vessel being replaced is not a storage vessel affected facility, applicability shall be determined in accordance with paragraph (e) and (e)(1) of this section.

(5) Each storage vessel affected facility formerly subject to Subpart OOOOa that was removed from service in accordance with §60.5395a(c) that is put back into service shall determine applicability according to the provisions in (e)(5)(i) or (ii).

(i) If the storage vessel is reconnected to the original source of liquids, it is a storage vessel affected facility subject to the same requirements as before being removed from service.

(ii) If the storage vessel is put back into service and not reconnected to the original source of liquids, applicability shall be determined in accordance with paragraph (e)(4) of this section.

API would also recommend that analogous changes be made to §60.5365(e).

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Public Hearing Comments On Proposed Climate, Air Quality, and Permitting Rules for the Oil and Natural Gas Industry; Wednesday, September 23, 2015; 9:00 AM - 7:55 PM; Public Hearing #1 - Denver, Colorado

Commenter Affiliation: None

Document Control Number: EPA-HQ-OAR-2010-0505-7337

Comment Excerpt Number: 180

Comment: My fourth point: We urge EPA not to get in the way of the success story, by developing one-size-fits-all regulatory solutions. Our industry is big, it's complex, and our operations vary substantially across the nation. As we learned in the development of the 2012 NSPS rules, EPA should exercise caution in the development of these rules, to allow operational flexibility as it seeks one-size-fits-all regulatory solutions. Industry must be able to comply with the requirement of these new rules. In the 2012 NSPS rule, EPA allowed implementation for storage vessel requirements to be phased in to accommodate the vast number of affected facilities. EPA should consider whether or not a similar compliance schedule is warranted in the proposed NSPS rules.

Response: This comment raises issues beyond the scope of this rulemaking.

Commenter Name: Cory Pomeroy, General Counsel

Commenter Affiliation: Texas Oil & Gas Association

Document Control Number: EPA-HQ-OAR-2010-0505-7058

Comment Excerpt Number: 69

Comment: For storage vessel affected facilities, owners and operators are required to reduce VOC emissions by 95.0 percent, as specified in proposed Section 60.5395a(a). Continuous compliance provisions of proposed Section **60.5415(a)(e)(3)**, however, incorrectly specify that owners and operators must reduce methane and VOC emissions as specified in proposed Section 60.5395a(a).

EPA should strike reference to methane in proposed Section **60.5415(e)(3)**, as the referenced standards specified in proposed Section 60.5395a(a) pertain only to VOC.

Response: Under the technical corrections of the final rule, the EPA made a series of amendments to correct deficiencies in the proposed regulatory text language. The EPA removed the words “methane and” in several places applicable to storage vessels.